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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/549,877	12/19/2005	Miles Stephen Cain	068029-5005US	5886

9629 7590 04/15/2009

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EXAMINER	
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ART UNIT	PAPER NUMBER
1794	
MAIL DATE	DELIVERY MODE
04/15/2009	PAPER

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/549,877
Filing Date: December 19, 2005
Appellant(s): CAIN ET AL.

W. Jackson Matney, Jr.
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 2/2/2009 appealing from the Office action mailed 6/4/2008.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is substantially correct. It is clear to the examiner that the Summary relates to independent claim 1. However, it should be noted that the statement at lines 8-9 "the barrier layer 12 is impervious, and therefore impossible to penetrate" is absent from the original specification. The scope of the term "impervious" will be discussed in the grounds of rejection set forth below. Further, while the statement at lines 11-13 "the silicone gel is extruded onto the silicone elastomer [barrier layer 12] before it is cured so that curing of both the silicone elastomer and gel is performed simultaneously" is supported in the original specification page 13, lines 4-7 for an alternative embodiment, this product by process limitation is absent from the claims being appealed.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

US 2002/0120972	Nakamura et al.	9-2002
US 6200195	Furuno et al.	3-2001

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-3 and 20-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakamura et al. [US 2002/0120972 A1] in view of Furuno et al. [US 6200195 B1].

Nakamura's invention relates to a clothing (fabric) with a sag-preventive (non-slip or adhesive) member [0001], such as socks, stockings, brassieres, under short pants, pantyhose, swimming wear, sport wear, etc. The sag-preventive member may be installed on the inner surface of the stocking in the vicinity of the opening, or on the inner circumferential surface of the brassiere [0028]. Fig. 2 shows that the sag-preventive member is installed by laminating a layer sheet 1, which comprises a flexible hot-melt film layer 11 and an adhesive layer 12, on the clothing layer 2 under a heating device 4. The film layer 11 is melted and welded on the clothing [0052-0053]. Useful adhesive layer may be polymeric materials, such as silicone, etc. [0037]. The hot melt flexible film layer avoids exuding a liquid silicone gum on the outer surface of the clothing thereby maintaining its appearance [0066].

For claims 1 and 2, Nakamura's cloth layer 2, flexible hot-melt film layer 11, and adhesive layer 12 read on the fabric layer, barrier layer, and adhesive layer of the claimed

invention. The liquid silicone gum is interpreted as uncured silicone gel prior to heat lamination. Nakamura lacks a teaching that the barrier layer is a silicone elastomer. However, Furuno's invention relates to an adhesive pad for adhering to human skin [col. 1, lines 5-7]. The adhesive pad is formed by 1) initially curing a silicone rubber to a semi-cured stage capable of shape retention; then 2) integrally curing the semi-cured silicone rubber layer and an uncured silicone gel in a heated mold. Fig. 2 shows that the cured article 1 comprises a pad body of silicone rubber (elastomer) layer 2 and a cured silicone gel adhesive layer 3 [col. 1, lines 64-66 and col. 2, lines 32-48]. It would have been obvious to one of ordinary skill in the art to substitute the bonding film layer 11 and adhesive layer 12 of Nakamura with the semi-cured silicone rubber layer (curable barrier layer) and uncured silicone gel layer of Furuno, with a reasonable expectation of success at the time the invention was made, because the selection of a functionally equivalent known material based on its suitability for its intended use supported a *prima facie* obviousness determination. Finally, since Furuno teaches discrete cured layers, the semi-cured rubber layer 2 is clearly impervious to the uncured silicone gel. The collective teachings of prior art render all the features of the claimed invention obvious.

For claim 3, a workable melt viscosity of the curable silicone rubber layer is deemed to be an obvious routine optimization to one of ordinary skill in the art of hot melt lamination, motivated by the desire to avoid extruding the low viscosity silicone gel on the outer surface of the clothing.

For claims 20-31, since the combined teachings of prior art render the subject matter of the instant invention obvious, and they are of the same use, workable thicknesses of the barrier layer and adhesive layer are deemed to be obvious routine optimizations for the same utility.

For claims 32-47, Nakamura relates to a clothing (fabric) with a sag-preventive member, including brassieres, as set forth above.

(10) Response to Argument

Appellants argue at Brief page 4:

> "*Nakamura* avoids the stated problems relating to the application of liquid silicon gum to a fabric by not using it in his invention. In other words, *Nakamura* does not disclose the application of an uncured adhesive layer to an article of clothing, either directly, or indirectly and, as such, does not contemplate a barrier layer to prevent the absorption of anything."

However, Nakamura expressly teaches:

> "[0062] This invention has the following advantages:
> …
> [0066] If a film layer is a hot-melt layer, it avoids liquid silicon gum from being exuded onto the outer surface of the cloth, thereby maintaining its appearance."

Clearly, Nakamura teaches that his invention has an advantage of having a film layer which is a barrier to the liquid silicone gum. Appellants' arguments to the contrary are incommensurate with Nakamura's teachings.

Appellants' argue at pages 4-5:

> "Flexible film layer 11 has vent holes. See Nakamura, par. [0036]. Therefore, flexible film layer is clearly not "impervious. The Advisory Action interprets the term "impervious" as meaning "that the barrier layer has sufficient thickness for preventing the adhesive silicone gel from being absorbed into the fabric substrate through its thickness direction when the sag preventing member is laminated to a fabric under pressure and heat." Advisory Action, p. 2. This interpretation is not consistent with the plain meaning of the term "impervious." As stated in the Amendment dated April 17, 2008 at page 3, "impervious" is defined as "[i]mpossible to penetrate." Further, it is unclear why the Advisory Action limits the interpretation to situations where "the sag preventing member is laminated to a fabric under pressure and heat" because the current invention is not so limited as it contemplates other means of adhering the barrier layer and adhesive layer to the fabric."

However, the definition of the term "impervious" in the amendment dated April 17, 2008 is absent from the original specification. Further, the term "impervious" has been defined in claim 1 as "barrier prevents absorption of the adhesive silicone gel coating into the fabric substrate", which is consistent with the disclosure in the original specification of the instant invention at page 2, lines 15-16 and page 11, lines 18-19 that "The thickness of the barrier layer is preferably chosen to be sufficient to ensure that an impervious layer is formed." Accordingly, the term "impervious" is interpreted as meaning that the barrier layer has sufficient thickness for preventing the adhesive silicone gel from being absorbed into the fabric substrate through its thickness direction when the sag preventing member is laminated to a fabric and forms a discrete adhesive (non-slip) layer after curing. It should be noted that the scope of being an "impervious" barrier layer has no structural relations to the presence of vent holes or not. The barrier layer is impervious in areas in which it is present. One of ordinary skill in the art would have recognized that since the prior art teaches that the barrier layer and adhesive of are coextensive, when the barrier layer is capable of preventing the adhesive from being absorbed into the fabric through the thickness direction, including at the outer edges of the laminate, there is no reason whatsoever to believe that the adhesive would be extruded through the vent holes and being absorbed by the fabric, because the adhesive surrounding the edges of the holes would have been similarly prevented from being extruding in the thickness direction by the barrier layer as the outer edges of the laminate. Regarding appellants' question concerning process conditions, since the disclosed process in the original specification relates to extrusion coating, it is necessarily under a heated melt condition with a back pressure exerted by an extruding melt in the thickness direction of the laminate. Nevertheless, since the product-by-process limitation is not claimed,

nor is there any evidence they produce distinct structure from the collective teachings of prior art, it is immaterial to the patentability of the claimed invention.

Appellants argue at page 5:

> "Second, claim 1 recites "whereby the barrier prevents absorption of the adhesive silicone gel coating into the fabric substrate." The Advisory Action states that flexible film layer 11 of Nakamura reads on a barrier as claimed. Appellants respectfully disagree. Flexible film layer 11 does not prevent absorption of the adhesive layer 12 into the fabric substrate. As discussed at least in the Response under 37 C.F.R. § 1.116 dated October 6, 2008, the adhesive layer is cured prior to the installation of the layer sheet. See Nakamura par. [0045]-[0047]. The adhesive layer would not absorb in the fabric, with or without the presence of flexible film layer 11 because it is cured. Therefore, flexible film layer 11 cannot be a barrier as claimed."

However, appellants' argument directed to prior art embodiment not relied upon is misplaced. Further, absence any evidence that the process produces a distinct feature from the collective teachings of prior art, the arguments are immaterial to patentability as set forth above.

Appellants argue at page 5:

> "The Final Office Action dated June 4, 2008, citing paragraph [0066] of Nakamura, states, "The hot melt flexible film layer avoids exuding a liquid silicone rubber on the outer surface of the clothing thereby maintaining its appearance." First, paragraph [0066] states "liquid silicon gum" not "liquid silicone rubber."

However, the term "gum" is interpreted as a rubbery material, as evidenced by common knowledge that chewing "gum" is a rubbery material. Further, the secondary reference Furuno teachings the same composition of the disclosed silicone rubber, the examiner maintains that the collective teachings render the structure and composition of the claimed invention obvious.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Victor S Chang/

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